

LIST OF CONTENTS

Volume 8, 1990

VOLUME 8, NUMBER 1

1990

CONTENTS

● SPECIAL ARTICLE

Some Legal Issues of Turf: Relation to Magnetic Resonance

A.E. James, Jr., O. Linton, A.E. James III, M.I. Shaff, R. Kessler, J.C. James, H.P. Pendergrass,
and C.L. Partain 1

● ORIGINAL CONTRIBUTIONS

Separation of Spin Populations with Gradient Echoes as an Aid in Pulse Sequence Tuning
J.C. Sandstrom and W.H. Perman 5

RASEE: A Rapid Spin-Echo Pulse Sequence
A.R. Bogdan and P.M. Joseph 13

Radio Frequency Field Intensity Mapping Using a Composite Spin-Echo Sequence
C.H. Oh, S.K. Hilal, Z.H. Cho, and I.K. Mun 21

**Bone Marrow Findings on Magnetic Resonance Images of the Knee: Accentuation
by Fat Suppression**
E.M. Harned, D.G. Mitchell, D.L. Burk, Jr., S. Vinitski, and M.D. Rifkin 27

**Concomitant Magnetic Field Gradients and Their Effects on Imaging at Low Magnetic
Field Strengths**
D.G. Norris and J.M.S. Hutchison 33

Determination of T_1 and T_2 -Relaxation Times in the Spleen of Patients with Splenomegaly
C. Thomsen, P. Josephsen, H. Karle, E. Juhl, P.G. Sørensen, and O. Henriksen 39

MR Pulse Sequences for Selective Relaxation Time Measurements: A Phantom Study C. Thomsen, K.E. Jensen, M. Jensen, E.R. Olsen, and O. Henriksen	43
MRI Evaluation of AIDS-Related Encephalopathy: Toxoplasmosis vs. Lymphoma M.C. Kupfer, C.-S. Zee, P.M. Colletti, W.D. Boswell, and R. Rhodes	51
Three-Dimensional In Vivo ESR Imaging in Rats M. Alecci, S. Colacicchi, P.L. Indovina, F. Momo, P. Pavone, and A. Sotgiu	59
Short-Term Exposure to a 1.5 Tesla Static Magnetic Field Does Not Affect Somato-Sensory-Evoked Potentials in Man C.Z. Hong and F.G. Shellock	65
The Use of Gd-DOTA in Magnetic Resonance Imaging of Experimentally Induced Mammary Tumors P.A. Bonnet, A. Michel, J.P. Fernandez, C. Cyteval, A. Rifai, M. Boucard, J.P. Chapat, and J.L. Lamarque	71
Improved Contrast at 1.5 Tesla Using Half-Fourier Imaging: Application to Spin-Echo and Angiographic Imaging E.M. Haacke, J. Mitchell, and D. Lee	79
● CASE REPORTS	
Retroperitoneal Cystic Lymphangioma: MR Findings L.J. Hovanessian, D.W. Larsen, J.K. Raval, and P.M. Colletti	91
Magnetic Resonance Imaging of Spinal Intradural Granulocytic Sarcoma P. Ang and C. Virapongse	95
● NEW PATENTS	
New Patents and Published Patent Applications from the United States and Over 30 Other Countries	I

VOLUME 8, NUMBER 2

1990

CONTENTS

● ORIGINAL CONTRIBUTIONS

Synthesis of Magnetic Gradients for NMR Tomography P. Mustarelli, M. Rudnicki, A. Savini, F. Savoldi, and M. Villa	101
Aortoiliac Imaging by Projective Phase Sensitive MR Angiography: Effects of Triggering and Timing of Data Acquisition on Image Quality P. Lanzer, W. McKibbin, D. Bohning, B. Thorn, G. Gross, G. Cranney, N. Nanda, and G. Pohost	107
MR Imaging of Degenerative Disorders of Brainstem and Cerebellum M. Gallucci, A. Splendiani, A. Bozzao, M. Baldassarre, B. Beomonte Zobel, C. Masciocchi, and R. Passariello	117

Evaluation of Syringomyelia and Chiari Malformations Using Ultra-Low Magnetic Resonance Imaging L. Samuelsson, J. Sääf, L.-O. Wahlund, K.-Å. Thuomas, and K. Bergström	123
Variable Flip Angle Imaging and Fat Suppression in Combined Gradient and Spin-Echo (GREASE) Techniques S. Vinitski, D.G. Mitchell, J. Szumowski, D.L. Burk, Jr., and M.D. Rifkin	131
Modified Gradients for Motion Suppression: Variable Echo Time and Variable Bandwidth J.L. Duerk, O.P. Simonetti, and G.C. Hurst	141
One-Dimensional Spectroscopic Imaging with Stimulated Echoes: Phantom and Human Leg Studies E.F. Jackson, P.A. Narayana, and D.P. Flamig	153
Volumetric Measurement of Canine Gliomas Using MRI R.L. Galloway, Jr., R.J. Maciunas, A.L. Failing, and H.T. Whelan	161
Investigation of Blood Flow Dynamics of NMR Angiography Q. Guo, L. Friloux, and O. Nalcioğlu	167
A Comparison of Models Used as Alternative Magnetic Resonance Image Reconstruction Methods M.R. Smith and S.T. Nichols	173
MRI Characterization of 9L-Glioma in Rat Brain at 4.7 Tesla S.S. Rajan, L. Rosa, J. Francisco, A. Muraki, M. Carvlin, and E. Tuturea	185
In Vivo Nuclear Magnetic Resonance Imaging and Spectroscopy of Aquatic Organisms S.J. Blackband and M.K. Stoskopf	191
● NEW PATENTS	
New Patents and Published Patent Applications from the United States and Over 30 Other Countries	I

VOLUME 8, NUMBER 3

1990

CONTENTS

● ORIGINAL CONTRIBUTIONS

Abdominal Aortic Aneurysm Evaluation: Comparison of US, CT, MRI, and Angiography P. Pavone, E. Di Cesare, P. Di Renzi, L. Marsili, M. Ventura, C. Spartera, and R. Passariello	199
Prostate Cancer: Comparison of Pre-Operative 0.35 T MRI with Whole-Mount Histopathology D. Thickman, G.J. Miller, K.D. Hopper, and M. Raife	205
Subtraction Technique for Contrast-Enhanced MR Images of Musculoskeletal Tumors S.L. Hanna, J.W. Langston, S.A. Gronemeyer, and B.D. Fletcher	213
MRI of the Skull D.L. Kirsch, P.M. Colletti, C-S. Zee, S. Destian, and J.K. Raval	217

Magnetic Resonance Imaging Features in Melanoma H.F. Marx, P.M. Colletti, J.K. Raval, W.D. Boswell, Jr., and C-S. Zee	223
Altered Condylar Morphology Associated with Disc Displacement in TMJ Dysfunction: Observations by MRI V.M. Rao, A. Babaria, A. Manoharan, S. Mandel, N. Gottenhrer, H. Wank, and S. Grosse	231
Effects of Recombinant Human Erythropoietin on the Haemopoietic Bone Marrow Monitored by Magnetic Resonance Spectroscopy in Patients with End-Stage Renal Disease K.E. Jensen, D. Stenver, M. Jensen, P. Grundtvig, C. Thomsen, H. Karle, O. Henriksen, and B. Nielsen	237
Magnetic Resonance Imaging of Nasopharyngeal and Paranasal Sinus Melanoma S.M. Hammersmith, M.R. Terk, P.B. Jeffrey, S.G. Connolly, and P.M. Colletti	245
A Comparative Study of Manganese meso-Sulfonatophenyl Porphyrins: Contrast-Enhancing Agents for Tumors R.J. Fiel, D.A. Musser, E.H. Mark, R. Mazurchuk, and J.J. Alletto	255
An Observation of Increased Contrast Due to Both T_1 and T_2 Weighting in a Synthetic Image H.A. McRitchie, J.P. Ridgway, L.W. Turnbull, and D.M. Kean	261
Detection of Hepatic Malignancies Using Mn-DPDP (Manganese Dipyridoxal Diphosphate) Hepatobiliary MRI Contrast Agent S.W. Young, B. Bradley, H.H. Muller, and D.L. Rubin	267
Signal-to-Noise Ratio Improvements in In Vivo High Resolution Micro-Volume Selected Spectroscopy S. Crozier, J. Field, and D.M. Doddrell	277
Effects of Osmotic Manipulation of Intracellular Hydration of HeLa S-3 Cells on Their Proton NMR Relaxation Times D.N. Wheatley, J.E. Rimmington, and M.A. Foster	285
The Line Shapes of the Water Proton Resonances of Red Blood Cells Containing Carbonyl Hemoglobin, Deoxyhemoglobin, and Methemoglobin: Implications for the Interpretation of Proton MRI at Fields of 1.5 T and Below N.A. Matwiyoff, C. Gasparovic, R. Mazurchuk, and G. Matwiyoff	295
Preautopsy Magnetic Resonance Imaging: Initial Experience P.R. Ros, K.C. Li, P. Vo, H. Baer, and E.V. Staab	303
MR Imaging of the Uterus: Low-Signal-Intensity Abnormalities of the Endometrium and Endometrial Cavity J.J. Brown, S. Thurnher, and H. Hricak	309
MRI of Intracranial Sinovenous Thrombosis: The Role of Phase Imaging L. Nadel, I.F. Braun, K.A. Kraft, M.E. Jensen, and F.J. Laine	315
The Influence of Chemical and Diffusive Exchange on Water Proton Transverse Relaxation in Plant Tissues B.P. Hills and S.L. Duce	321
Experimental Cerebral Infarction in the Rat: Utility of Gd-DOTA for MR Imaging F.L. Van de Vyver and G.V. Peersman	333

● *CASE REPORT*

Giant-Cell Tumor of the Tibia in a Child Presenting as an Expansile Metaphyseal Lesion with Fluid-Fluid Levels on MR

P.C. Buetow, S. Newman, and M.J. Kransdorf

341

● *TECHNICAL NOTE*

Slotted Resonator: Principles and Applications for High-Frequency Imaging and Spectroscopy on Electrically Conducting Samples

E-J. Nijhof

345

● *NEW PATENTS*

New Patents and Published Patent Applications from the United States and Over 30 Other Countries

I

VOLUME 8, NUMBER 4

1990

CONTENTS

● *ORIGINAL CONTRIBUTIONS*

Fast and Precise T₁ Imaging Using a TOMROP Sequence

G. Brix, L.R. Schad, M. Deimling, and W.J. Lorenz

351

Scaphoid Fractures and Kienbock's Disease of the Lunate: MR Imaging with Histopathologic Correlation

T.S. Desser, S. McCarthy, and T. Trumble

357

Relaxation Efficacy of Paramagnetic and Superparamagnetic Microspheres in Liver and Spleen

A.K. Fahlvik, E. Holtz, and J. Klaveness

363

High-Field MRI and US Evaluation of the Pelvis in Women with Leiomyomas

M. Zawin, S. McCarthy, L.M. Scoutt, and F. Comite

371

3D-SNAPSHOT FLASH NMR Imaging of the Human Heart

D. Henrich, A. Haase, and D. Matthaei

377

The Prospective Evaluation of Gd-DTPA in 225 Consecutive Cranial Cases: Adverse Reactions and Diagnostic Value

B.R. Carollo, V.M. Runge, A.C. Price, K.L. Nelson, C.R. Wolf, and M.I. Pacetti

381

CSF Flow Artifact Reduction Using Cardiac Cycle Ordered Phase-Encoding Method

M.H. Cho, W.S. Kim, and Z.H. Cho

395

A Technique for MR Imaging of the Knee Under Large Flexing Angles

J.W. Carlson, M. Gyori, and L. Kaufman

407

The Clinical Significance of Stage 2 Meniscal Abnormalities on Magnetic Resonance Knee Images E.H. Dillon, C.F. Pope, P. Jokl, and K. Lynch	411
Incidental Magnetization Transfer Contrast in Standard Multislice Imaging W.T. Dixon, H. Engels, M. Castillo, and M. Sardashti	417
MRI Effects on the Teratogenicity of X-Irradiation in the C57BL/6J Mouse D.A. Tyndall	423
Water ¹H Spin-Lattice Relaxation as <i>Fingerprint</i> of Porous Media G.C. Borgia, P. Fantazzini, and E. Mesini	435
Motion Dependence of Myocardial Transverse Relaxation Time in Magnetic Resonance Imaging J. Katz, L.M. Boxt, R.R. Sciacca, and P.J. Cannon	449
Sodium-23 and Proton Nuclear Magnetic Resonance Imaging Studies of Carbon Tetrachloride-Induced Liver Damage in the Rat M. Brauer, R.A. Towner, and D.L. Foxall	459
The Relationship Between Thermodynamics and the Toxicity of Gadolinium Complexes W.P. Cacheris, S.C. Quay, and S.M. Rocklage	467
Simulation of the Influence of Magnetic Field Inhomogeneity and Distortion Correction in MR Imaging J. Weis and L. Budinský	483
Tissue Characterization of Brain Tumors During and After Pion Radiation Therapy P. Boesiger, R. Greiner, R.E. Schoepflin, R. Kann, and U. Kuenzi	491
Proton Relaxation Enhancement in Experimental Brain Tumors—In Vivo NMR Study of Manganese(III)TPPS in Rat Brain Gliomas K. Bockhorst, M. Höhn-Berlage, M. Kocher, and K.-A. Hossman	499
Small Animal MRI at 0.35 Tesla: Growth and Morphology of Intra-Organ Murine Tumors T.M. Button, R.J. Fiel, M. Goldrosen, and N. Paolini	505
● CASE REPORT	
Spectroscopic MRI: A Tool for the Evaluation of Systemic Lipid Storage Disease A. Leroy-Willig, D. Duboc, J. Bittoun, O. Jolivet, R. Doumith, M. Paturneau-Jouas, I. Idy-Peretti, and A. Syrota	511
● TECHNICAL NOTE	
A New, Fully Versatile Surface Coil for MRI J. Rousseau, P. Lecouffe, and X. Marchandise	517
● NEW PATENTS	
New Patents and Published Patent Applications from the United States and Over 30 Other Countries	I

CONTENTS

● ORIGINAL CONTRIBUTIONS

- Gadolinium-DTPA-Enhanced and Digitally Subtracted Magnetic Resonance Imaging of Estrogen-Induced Pituitary Lesions in Rats: Correlation with Pituitary Anatomy**
J.H.J. van Nesselrooij, N.M. Szevenyi, G.M. Tillapaugh-Fay, and F.G.J. Hendriksen 525
- Multiecho Multimoment Refocussing of Motion in Magnetic Resonance Imaging: MEM-MO-RE**
J.L. Duerk, O.P. Simonetti, G.C. Hurst, and A.O. Motta 535
- Measurement of CSF Flow Using an Interferographic MR Technique Based on the RARE-FAST Imaging Sequence**
J. Hennig, D. Ott, Th. Adam, and H. Friedburg 543
- Contrast Manipulation and Artifact Assessment of 2D and 3D RARE Sequences**
R.V. Mulkern, S.T.S. Wong, C. Winalski, and F.A. Jolesz 557
- Pharmacokinetic Analysis of Blood Distribution of Intravenously Administered ^{153}Gd -Labeled $\text{Gd}(\text{DTPA})^{2-}$ and $^{99\text{m}}\text{Tc}(\text{DTPA})$ in Rats**
P. Wedeking, S. Eaton, D.G. Covell, S. Nair, M.F. Tweedle, and W.C. Eckelman 567
- Observer Reliability in CT and MRI of the Abdomen/Pelvis**
D.M. Reker, J.W. Fletcher, S. Tantana, B. Mahanta, W. Vas, R. Yoo, R.J. Gresick, Jr., J.C. Romeis, C.C.D. DuMontier, E. Heiberg, M.K. Wolverson, and H.G. Greditzer, III 577
- MRI of Aggressive Fibromatosis: Frequent Appearance of High Signal Intensity on T_2 -Weighted Images**
R. Feld, D.L. Burk, Jr., P. McCue, D.G. Mitchell, R. Lackman, and M.D. Rifkin 583
- Paramagnetic Oil Emulsions as Oral Magnetic Resonance Imaging Contrast Agents**
K.C.P. Li, P.G.P. Ang, R.P. Tart, B.L. Storm, R. Rolfes, and P.C.K. Ho-Tai 589
- Prolonged T_1 in Patients with Liver Cirrhosis: An In Vivo MRI Study**
C. Thomsen, P. Christoffersen, O. Henriksen, and E. Juhl 599
- Effect of Tissue Fat and Water Content on Nuclear Magnetic Resonance Relaxation Times of Cardiac and Skeletal Muscle**
T.D. Scholz, S.R. Fleagle, F.C. Parrish, T. Breon, and D.J. Skorton 605
- Demonstration of Aortic Lesions Via Cine Magnetic Resonance Imaging**
S.B. Sonnabend, P.M. Colletti, and M.J. Pentecost 613
- Truncated Sinc Slice Excitation for ^{31}P Spectroscopic Imaging**
J.R. MacFall, H.C. Charles, and R. Prost 619
- MR Imaging of Pulmonary Parenchyma and Emboli by Paramagnetic and Superparamagnetic Contrast Agents**
M.L. Thakur, S. Vinitski, D.G. Mitchell, P.M. Consigny, S. Lin, and M. Rifkin 625

MR Imaging of Experimental and Clinical Thrombi at 1.5 T J.C. Bass, L.W. Hedlund, and H.D. Sostman	631
--	-----

A Functionalized Superparamagnetic Iron Oxide Colloid as a Receptor Directed MR Contrast Agent L. Josephson, E.V. Groman, E. Menz, J.M. Lewis, and H. Bengel	637
--	-----

● CASE REPORTS

Cervicothoracic Myelopathy in Conradi-Hunermann Disease: MRI Diagnosis P. Goodman and R. Dominguez	647
--	-----

Primary Left Atrial Angiosarcoma: Follow-Up by Magnetic Resonance Imaging J.P. Laissy, P. Bernier, B. Patru, C. Duchateau, J.P. Gaillard, J. Thiebot, and M. Benozio	651
--	-----

Magnetic Resonance Imaging of a Third Trimester Abdominal Pregnancy W.D. Murphy, D.H. Feiglin, C.C. Cisar, A.M. Al-Malt, and E.M. Bellon	657
--	-----

Left Ventricular Aneurysmectomy After Myocardial Infarction Following Detection of Left Ventricular Thrombosis by Magnetic Resonance Imaging R.R. Lalisang, L.H.B. Baur, E.E. van der Wall, A. de Roos, and A.V.G. Bruschke	661
---	-----

MR Imaging of Pterygoid Muscle Inflammation A.P. Ciacchella and W.L. Higgins	665
--	-----

Childhood Chondrosarcoma: MR Imaging with Gadolinium-DTPA S.L. Hanna, H.L. Magill, D.M. Parham, L.C. Bowman, and B.D. Fletcher	669
--	-----

● BOOK REVIEW

A Non-Mathematical Approach to Basic MRI Reviewed by Robin A. Greene	673
--	-----

● NEW PATENTS

New Patents and Published Patent Applications from the United States and Over 30 Other Countries	I
---	---

VOLUME 8, NUMBER 6	1990
--------------------	------

CONTENTS

● ORIGINAL CONTRIBUTIONS

Wireless Retrospective Gating: Application to Cine Cardiac Imaging T.A. Spraggins	675
---	-----

Gadolinium-DTPA-Enhanced MRI of Intraocular Tumors G. Adam, M. Brab, K. Bohndorf, and R.W. Günther	683
--	-----

Spin-Lattice Relaxation Times and Nuclear Overhauser Enhancement Effect for ³¹P Metabolites in Model Solutions at Two Frequencies: Implications for In Vivo Spectroscopy M. Mathur-De Vré, C. Maerschalk, and C. Delporte	691
--	-----

Magnetic Resonance Imaging as an Adjunct to Sonography in the Evaluation of the Female Pelvis T.J. Riccio, H.G. Adams, D.E. Munzing, and R.F. Mattrey	699
Fiber-to-Field Angle Dependence of Proton Nuclear Magnetic Relaxation in Collagen S Peto and P. Gillis	705
The Application of Proton Nuclear Magnetic Resonance Imaging for the In Vivo Characterisation of Chemically Induced Renal Lesions in Rats Over a Prolonged Time Study J.S. Finney, P.H. Bach, M.-C. Bushell, N.N. Gregg, and D.G. Taylor	713
A Technique for Flow-Enhanced Magnetic Resonance Angiography of the Lower Extremities R.E. Wendt III, W. Nitz, J.D. Morrisett, and T.D. Hedrick	723
A Novel Editing Technique for ¹⁹F MRI: Molecule-Specific Imaging R.P. Mason, N. Bansal, E.E. Babcock, R.L. Nunnally, and P.P. Antich	729
Predictability of SNR and Reader Preference in Clinical MR Imaging R.S. Owen and F.W. Wehrli	737
Magnetic Resonance Imaging of the Thoracic Cavity Using a Paused 3DFT Acquisition Technique R.L. Stern, G.A. Johnson, and C.E. Ravin	747
The Effects of Restricted Diffusion in Nuclear Magnetic Resonance Microscopy B.P. Hills, K.M. Wright, and P.S. Belton	755
Slice Profile Improvement for a Clinical MRI System J. Mao, H. Yan, and J.R. Fitzsimmons	767
Changes in MR Signal Intensity and Contrast Enhancement of Therapeutically Irradiated Soft Tissue B.D. Fletcher, S.L. Hanna, and L.E. Kun	771
Localized In Vivo Proton Spectroscopy of the Bone Marrow in Patients with Leukemia K.E. Jensen, M. Jensen, P. Grundtvig, C. Thomsen, H. Karle, and O. Henriksen	779
Magnetic Resonance Imaging and Computer Tomography in Pelizaeus-Merzbacher Disease P.A. Caro and H.G. Marks	791
Approach to Equilibrium in Snapshot Imaging R.A. Jones and P.A. Rinck	797
MRI and Diabetic Foot Infections A. Wang, D. Weinstein, L. Greenfield, L. Chiu, R. Chambers, C. Stewart, G. Hung, F. Diaz, and T. Ellis	805
Varied MR Appearance of Autism: Fifty-Three Pediatric Patients Having the Full Autistic Syndrome M.A. Nowell, D.B. Hackney, A.S. Muraki, and M. Coleman	811
● CASE REPORTS	
Severe Anaphylactoid Reaction After IV Gd-DTPA K.L. Weiss	817

Cerebral Abnormalities in Wilson's Disease as Evaluated by Ultra-Low-Field Magnetic Resonance Imaging and Computerized Image Processing T. Linné, I. Agartz, J. Sääf, and L.-O. Wahlund	819
Cardiac Lipoma: Six-Year Follow-up with MRI Characteristics, and a Review of the Literature G.I. Hananouchi and W.B. Goff II	825
● <i>TECHNICAL NOTE</i>	
Advances in Cardiac Applications of Subsecond FLASH MRI D. Chien, K.-D. Merboldt, W. Hänicke, H. Bruhn, M.L. Gyngell, and J. Frahm	829
● <i>LIST OF CONTENTS, AUTHOR INDEX, KEYWORD INDEX, VOLUME 8, 1990</i>	837
● <i>NEW PATENTS</i>	
New Patents and Published Patent Applications from the United States and Over 30 Other Countries	I

